

Follow-Up Audit
Kansas City, Missouri, Police Department
Patrol Deployment: Blackout Analysis

September 2004

City Auditor's Office
City of Kansas City, Missouri

September 1, 2004

Honorable Mayor, Members of the City Council, and Members of the Board of Police Commissioners:

The audit compares the current level of blackout in all the patrol divisions to what was in our January 1998 performance audit *Police Department Patrol Deployment: Blackout Analysis*. Blackout refers to periods when all patrol officers assigned to respond to calls for service in a division are busy and cannot respond to an additional call.

Blackout remains significant in all patrol divisions. Blackout patterns have changed within divisions since the 1998 audit: the average sum of daily blackout has decreased in the East, North and South divisions, but increased in the Central and Metro divisions. Calls for service have increased for all five patrol divisions compared to the original audit.

On average, police responded to priority 1 and 2 calls in eleven to thirteen minutes. Response times vary among divisions. On average, Central Division had the fastest response time; North Division had the slowest response time for all type of calls. We found some high priority calls did not have arrival times, although officers are required to provide arrival times for priority 1 and 2 calls. The Chief of Police should take steps to ensure that officers provide valid arrival times for high priority calls.

The Police Department stopped measuring blackout and began to measure and report Immediate Car Unavailability (ICU). Blackout is an important indicator of whether adequate resources are allocated to police patrol and how well these resources are distributed. Blackout is a better measure of patrol deployment than ICU because blackout measures any time a car is not available to respond to a call. The Chief of Police should measure and report blackout. In addition, the Chief should determine an acceptable level of blackout for the department.

We provided draft reports to the Chief of Police on August 6, 2004, for review and comment. His response is appended. We appreciate the courtesy and cooperation of city staff during the audit. The team for this audit was Vivien Zhi and Mike Eglinski.

Mark Funkhouser
City Auditor

Kansas City, Missouri Police Department

Patrol Deployment: Blackout Analysis

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Kansas City, Missouri Police Department

Patrol Deployment: Blackout Analysis

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Introduction

Objectives

We conducted this performance audit of the Kansas City, Missouri, Police Department Patrol Deployment: Blackout Analysis under authority of Article II, Section 13 of the city charter, which establishes the Office of the City Auditor and describes the City Auditor's primary duties. We also conducted the audit under the authority of Chapter 84, section 350 Revised Statutes of Missouri, which authorizes the City Auditor to audit the Police Department.

A performance audit systematically examines evidence to independently assess the performance and management of a program against objective criteria. Performance audits provide information to improve program operations and facilitate decision-making.¹

We designed this follow-up audit to answer the following questions about blackout, periods when all the cars on duty are out of service and no cars are available to answer the incoming calls for service:

- What is the extent of blackout? How does blackout vary by division, day-of-week, time-of-day, season or other factors? What is the relationship between blackout and response time? How does blackout now compare to blackout when we did the original audit?

Scope and Methodology

This performance audit assesses the Kansas City, Missouri Police Department's progress in addressing problems we identified in our January 1998 report.²

As part of the audit work, we rode along with police patrol officers, observed police dispatch operations, and interviewed Police Department personnel. We reviewed the Police Department's computer program for

¹ Comptroller General of the United States, *Government Auditing Standards* (Washington, DC: U.S. Government Printing Office 2003), p. 21.

² *Kansas City, Missouri, Police Department, Patrol Deployment: Blackout Analysis*, Office of the City Auditor, Kansas City, Missouri, January 1998.

calculating “immediate car unavailability” and analyzed the department’s computerized crew log and dispatch data from October 1, 2002 to September 30, 2003. We compiled descriptive statistics for police workload and measured response time and blackout.

In our 1998 audit we used a simulation model to assess changes that could reduce blackout. We did not conduct another simulation study of patrol deployment for this audit.

We conducted this audit in accordance with generally accepted government auditing standards. We omitted no privileged or confidential information from this report.

Background

Patrol Bureau

The Patrol Bureau provides police service to the public primarily through responding to 911 emergency calls for service and routine patrolling. The patrol bureau also provides for tactical response to high-risk situations and traffic enforcement and control.

The Patrol Bureau is comprised of five geographically based patrol divisions: Central, Metro, East, North, and South. The Bureau also includes the special operations division, including the traffic enforcement unit, traffic investigations unit, and patrol support unit.

About 70 percent of the department’s law enforcement positions are assigned to the Patrol Bureau. Over 700 of the bureau’s approximately 990 sworn positions are in the five patrol divisions. Police officers are assigned to regular patrol duty, community policing activities, and other functions such as crime analysis and crime prevention.

Exhibit 1. Patrol Division Funding and Staffing, 2004

Division	Budget	Law Enforcement	
		Employees	Civilians
Central	\$9,267,514	178	14
Metro	\$8,035,802	158	14
East	\$8,902,908	172	14
South	\$5,489,503	102	13
North	\$5,944,313	108	12
Total	\$37,640,040	718	67

Source: KCPD Appropriated Budget, 2003-2004.

Call Priorities

The Police Department changed departmental guidelines for determining the number of cars to be dispatched to a given type of incident in 1998. There are currently five priority types. (See Exhibit 2.) Procedural Instruction (PI) 98-4, Call Prioritization, establishes priorities to help provide sufficient patrol units to handle calls for service. The PI defines how dispatchers should handle various calls for service.

Exhibit 2. Examples of Response Priorities

Priority	Description	Examples	Cars
One	Assist the officer; a call presents extreme danger to human life; calls present a potential danger to human life.	Assist an officer Disturbance – nature unknown	3+Sgt. 2
Two	A call which presents evident danger.	Strongarm robberies Disturbance Bomb threats	2 2 1+Sgt.
Three	Non-life threatening, but requires immediate police presence.	911 hang-up Stealing just occurred/suspect in custody	2 2
Four	Not of the urgent nature and a delayed response. Police presence is needed to control a situation.	Intrusion alarms Non-injury accidents Animal bite	1 1 1
Five	Delayed response.	Residential and non-residential burglaries Noise disturbance	1 1

Source: KCPD Procedural Instruction 98-4.

Summary of the 1998 Audit

Our 1998 audit analyzed the extent of blackout and factors that contributed to blackout. We worked with a consultant to develop a simulation model of patrol deployment and used it to assess changes that could reduce blackout.

We found that blackout was common in all parts of the city. While most periods were relatively short (five minutes or less), divisions sometimes experienced continuous blackout for over two hours. Citywide blackout was less frequent and in nearly all instances lasted less than three minutes.

We also found differences in blackout among the five patrol divisions, on different days of the week, and at different times of day. East Division experienced the most blackout periods, the highest average sum of daily blackout, and the longest uninterrupted blackout period. East Division averaged almost four hours of blackout each day, with blackout periods averaging seven minutes in length.

We made a number of recommendations related to patrol staffing, scheduling, and departmental leave policies. We recommended the Board of Police Commissioners set goals for the maximum level of blackout and the maximum percent of patrol officers' time committed to calls for service in each division; the Chief of Police adopt a deployment plan designed to achieve the goals adopted by the board; and the patrol bureau commander regularly report the statistics on blackout, committed time, and on-duty patrol staffing that will allow the board to monitor the achievement of the adopted goals. The deployment plan should carefully reconsider the use of sworn officers in administrative posts.

We also recommended changes to call handling intended to reduce patrol officer dispatches for traffic-related calls and intrusion alarms.

Findings and Recommendations

Summary

Blackout refers to periods when all patrol officers assigned to respond to calls for service in a division are busy and cannot respond to an additional call. Blackout remains significant in all patrol divisions. Blackout patterns have changed within divisions since our 1998 audit: the average sum of daily blackout has decreased in East, North and South divisions, but increased in Central and Metro divisions. Calls for service have increased for all five patrol divisions, with North Division experiencing an almost 60 percent increase compared to the original audit.

On average, police responded to priority 1 and 2 calls in eleven to thirteen minutes. Response times vary among divisions. On average, Central Division had the fastest response time; North Division had the slowest response time for all type of calls. We found some high priority calls did not have arrival times. Officers are required to provide arrival time for priority 1 and 2 calls to the dispatchers, but officers don't always record arrival times. The Chief of Police should take steps to ensure that officers provide valid arrival times to the dispatchers for high priority calls.

The Police Department stopped measuring blackout and began to measure and report Immediate Car Unavailability (ICU). Blackout is an important indicator of whether adequate resources are allocated to police patrol and how well these resources are distributed. Blackout is a better measure of patrol deployment than ICU because blackout measures any time a car is not available to respond to a call. The Chief of Police should measure and report blackout. In addition, the Chief should determine an acceptable level of blackout for the department.

Blackout Remains Significant in All Parts of the City

On each day between October 1, 2002, and September 30, 2003, some part of the city experienced patrol blackout. While most periods were relatively short, blackout within a division has lasted over two hours. Compared to the original audit, blackout remains significant. Blackout

patterns have changed since the original audit. All patrol divisions still experienced significant blackout.

All Patrol Divisions Experienced Significant Blackout

During the period we examined, Metro Division averaged about 4 hours (242 minutes) of blackout each day, the highest average sum of daily blackout. Metro Division also had the longest blackout period during the 12-month period we reviewed. The length of the average blackout period in Metro Division was 11 minutes and 6 seconds. Although Metro had less average number of blackout periods per day than Central and East divisions, it had the longest average duration of blackout periods.

Central had the most blackout periods. Average sum of daily blackout in Central and East divisions are also high. The duration of blackout periods is also longer in North and South divisions than the Central and East divisions. All the divisions except East had blackout every day. (See Exhibit 3.)

Exhibit 3. Summary of Blackout Statistics

	Central	Metro	East	North	South
Number of days with no blackout	0	0	1	0	0
Avg. number of blackout periods per day	25.0	21.8	23.7	11.5	12.5
Avg. duration of blackout periods (In minutes)	8.6	11.1	8.4	10.3	9.9
Duration of maximum blackout ³ (In minutes)	398	400	222	149	109
Avg. sum of daily blackout ⁴ (In minutes)	215.3	241.7	199.7	117.9	123.7

Source: Dispatch and crew log data, October 1, 2002 through September 30, 2003.

Blackout happens frequently and usually lasts for short time periods.

On average, the Central, Metro, and East divisions had over 20 blackout periods each day; the North and South divisions had over 10 blackout periods each day. Over 50 percent of the blackout periods lasted 5 minutes or less in the Central, Metro and East divisions. About 50 percent of blackout periods in the North and South divisions lasted 6 minutes or less.

³ The duration of maximum blackout refers to the longest period of consecutive minutes of blackout during the 12-month period.

⁴ The sum of daily blackout refers to the total number of minutes of blackout on a given day, not consecutive minutes of blackout. The average sum of daily blackout is the average per day of this total over the 12-month period.

Exhibit 4. Percentiles of Blackout Duration (In Minutes)

Percentiles	Central	Metro	East	North	South
25%	2	2	2	2	2
50%	5	5	5	6	6
75%	11	12	10	14	13
Total Blackout Periods	9112	7973	8649	4192	4558

Source: Dispatch and crew log data, October 1, 2002 through September 30, 2003.

Blackout Patterns Have Changed Within Divisions

Compared to the original audit, blackout remains significant. The average sum of daily blackout has decreased in the East, North and South divisions, but increased in the Central and Metro divisions. In the original audit, East Division averaged almost four hours (226.4 minutes) of blackout each day. In the current analysis, Metro Division averaged about 4 hours (242 minutes) of blackout each day, the highest average sum of daily blackout. (See Exhibit 5.)

Exhibit 5. Average Sum of Daily Blackout (In Minutes)

	1998	2003	Change
Central	167.5	215.3	29%
Metro	192.0	241.7	26%
East	226.4	199.7	-12%
North	161.5	117.9	-27%
South	145.7	123.7	-15%

Sources: Performance Audit, *Kansas City, Missouri, Police Department Patrol Deployment: Blackout Analysis*, January 1998; and Dispatch and crew log data, October 1, 2002 through September 30, 2003.

Calls for service have increased for all five patrol divisions, with North Division experiencing almost a 60 percent increase compared to the original audit. Calls for services include mostly citizen initiated calls; department and self-initiated calls are excluded for the calculation of calls for service. The number of cars on-duty stayed about the same. (See Exhibit 6.)

Exhibit 6. Average Number of Calls for Service and Cars On-duty By Division

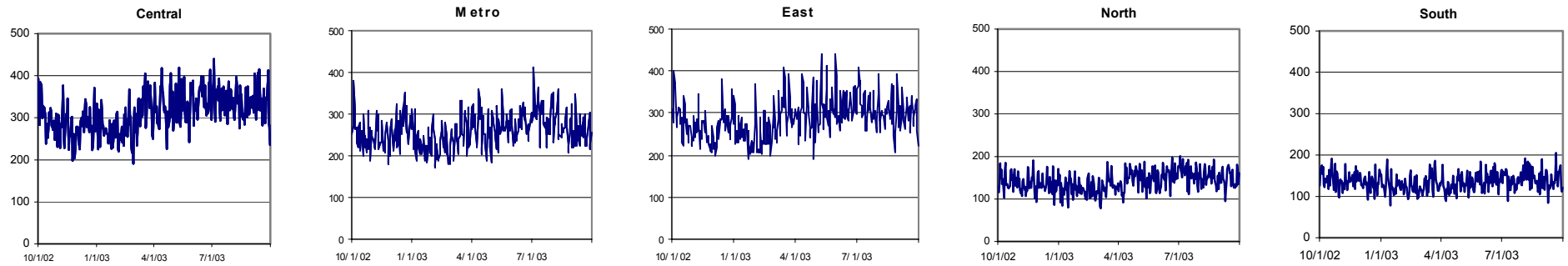
	Average Number of Calls for Service			Average Number of Cars On-duty		
	1998	2003	Change	1998	2003	Change
Central	212.2	310.7	46%	16.3	16.2	-0.6%
Metro	243.4	261.0	7%	17.5	17.6	0.7%
East	227.3	287.5	26%	16.0	15.9	-0.3%
North	89.1	141.3	59%	9.3	9.0	-3.8%
South	107.9	135.1	25%	10.4	10.1	-2.9%

Sources: Performance Audit, *Kansas City, Missouri, Police Department Patrol Deployment: Blackout Analysis*, January 1998; and Dispatch and crew log data, October 1, 2002 through September 30, 2003.

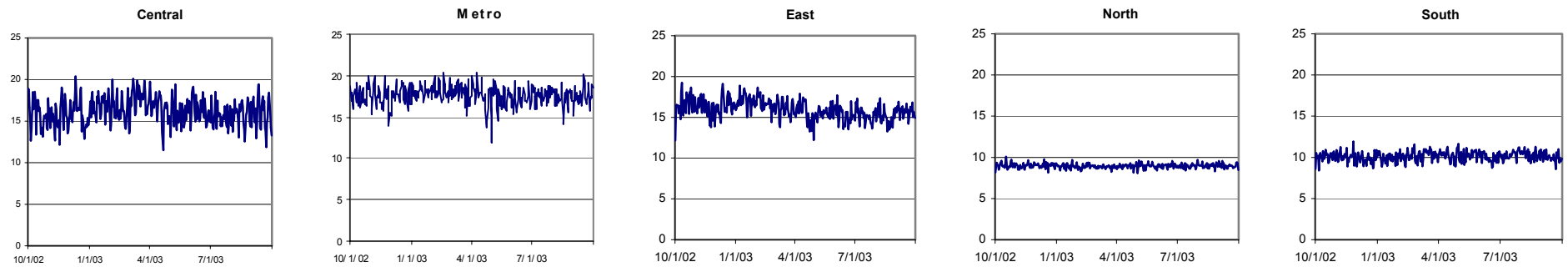
Patrol Deployment: Blackout Analysis

The following graphs show the number of calls for service, the average number of patrol cars on-duty, and the sum of blackout per day over the period we reviewed. The up and down movement of the lines in the blackout graphs indicate considerable daily variation. The variation in the amount of blackout per day means that individual instances of blackout are difficult to predict. There is less variation in workload and staffing. Blackout was generally higher in the summer months when calls for service were higher. (See Exhibit 7.)

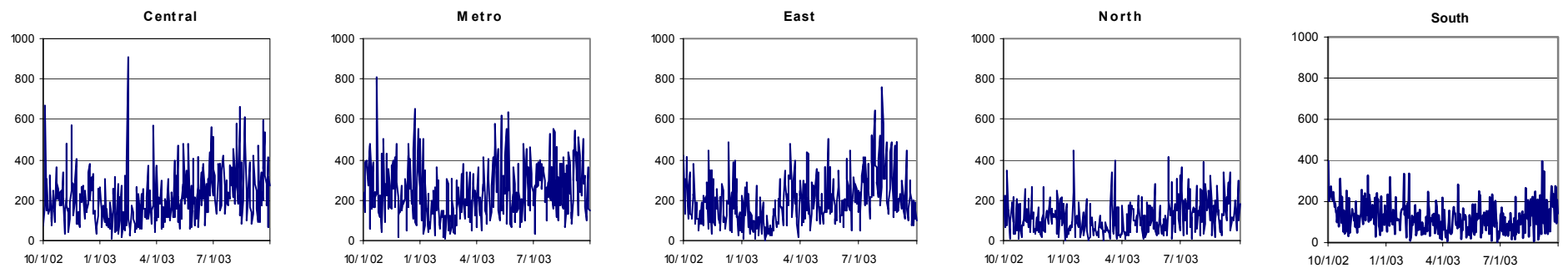
Exhibit 7. Calls for Service By Day



Average Patrol Cars On-Duty



Sum of Daily Blackout (In Minutes)



Blackout, Call Volume, and Cars On-Duty By Day of Week

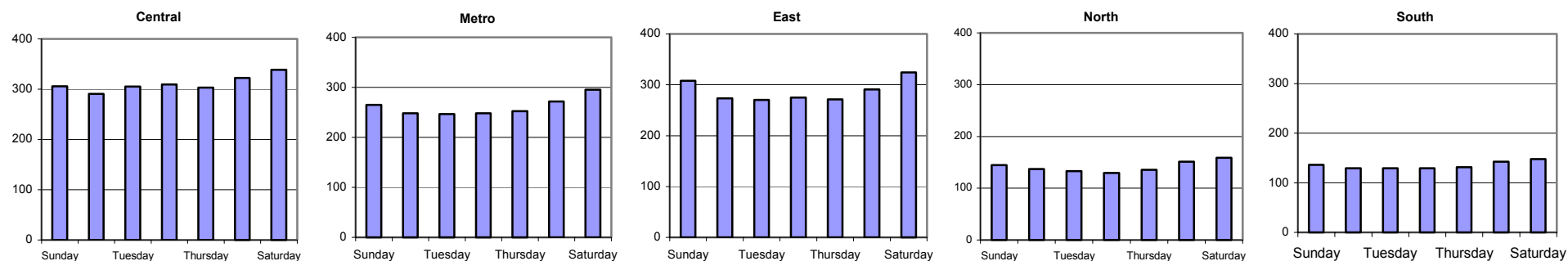
We examined blackout, call volume, and cars on-duty by day of week. Exhibit 8 on the next page shows the average number of calls for service, the average number of cars on-duty, and the average sum of daily blackout by day of week for each division for October 1, 2002, through September 30, 2003.

The Metro and East divisions had higher average sum of daily blackout on weekends. The Central Division had highest blackout on Fridays. The North and South divisions had less day-of-week variation than the other divisions.

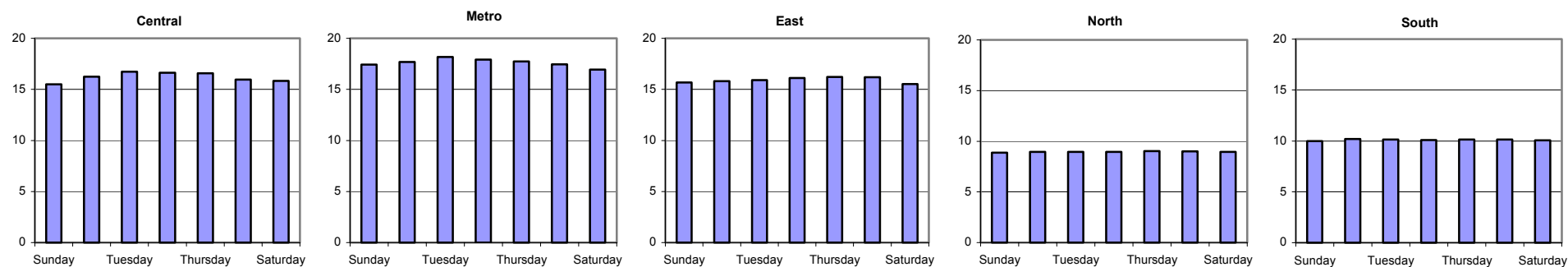
Cars on-duty were lower on Saturdays and Sundays in all the divisions, except the North Division where Sunday and Tuesday were lowest, but not by much. Cars on-duty were higher during mid-week. The North and South divisions showed less day-of-week variations.

Calls for service were highest on Fridays and Saturdays in the Central, Metro, North and South divisions. Calls for service were highest on Saturday and Sunday in the East Division. Calls for service were relatively lower during mid-week.

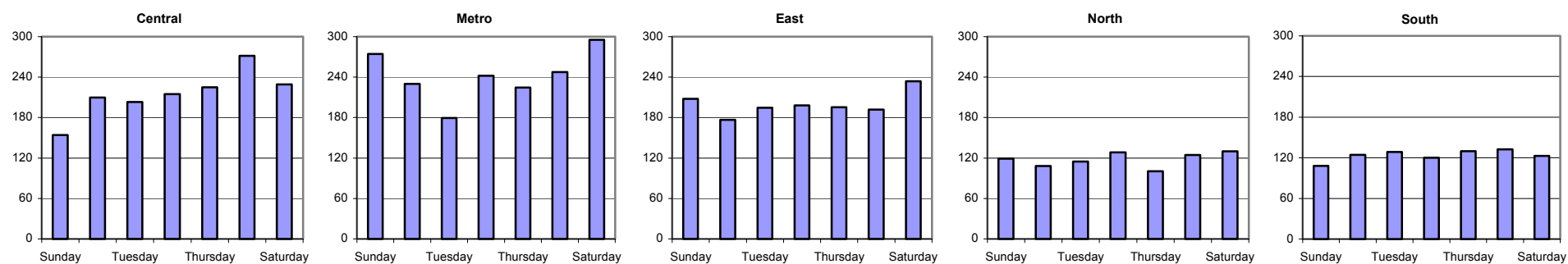
Exhibit 8. Average Calls for Service By Day of Week



Average Patrol Cars On-Duty



Average Sum of Blackout (In Minutes)



Blackout, Call Volume, and Cars On-Duty By Time of Day

We also examined blackout, call volume, and cars on-duty by time of day. The following exhibits compares the average number of calls for service, the average number of cars on-duty and the average sum of blackout by hour of day for each division for October 1, 2002, through September 30, 2003, to the original audit.

Average hourly blackout peaks at different times within divisions. The average hourly blackout was highest between 1:00 and 2:00 PM in the Central and East divisions, between 6:00 to 7:00 PM in the Metro Division, and between 7:00 and 8:00 PM in the North and South divisions. Blackout was lowest during late night hours between 10:00 PM to 12:00 AM in all divisions.

In the original audit, blackout peaked in the afternoon in all divisions. Blackout was lowest in the early morning hours. The North and Central divisions experienced most of their blackout during the evening shift. Blackout occurred in the Metro, East and South divisions throughout the day and evening.

Calls for service and cars on-duty peaked at different times. The patterns of calls for service for all five divisions are similar. It was lowest between 5:00 to 6:00 AM and gradually increased during the day. Calls for service peaked between 9:00 to 11:00 PM at Central, Metro, and East divisions, between 5:00 to 6:00 PM in the North Division, and between 9:00 to 10:00 PM in the South Division.

Average number of cars on duty peaked between 10:00 PM to 12:00 AM in all divisions. Cars on-duty was lower in the morning hours between 6:00 to 8:00 AM in all divisions. A shift change occurs between 6:00 and 8:00 AM.

In the original audit, average hourly calls for service peaked between 5:00 to 6:00 PM in each division except Central, where calls peaked between 10:00 and 11:00 PM. Calls remained relatively high in all divisions between 5:00 and about 11:00 PM to midnight. Average hourly staffing peaked between 8:00 and 9:00 PM in the Metro, East and South divisions and between 1:00 and 2:00 AM in the Central and North divisions.

Exhibit 9. Central Patrol Division: Calls, Cars On-Duty, and Blackout By Hour of Day

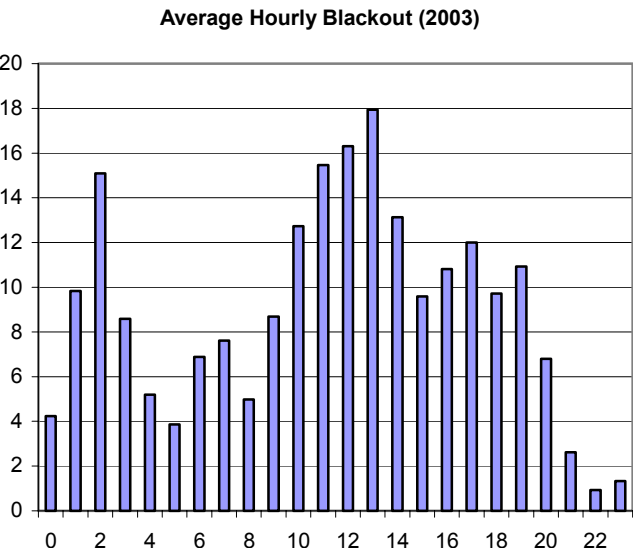
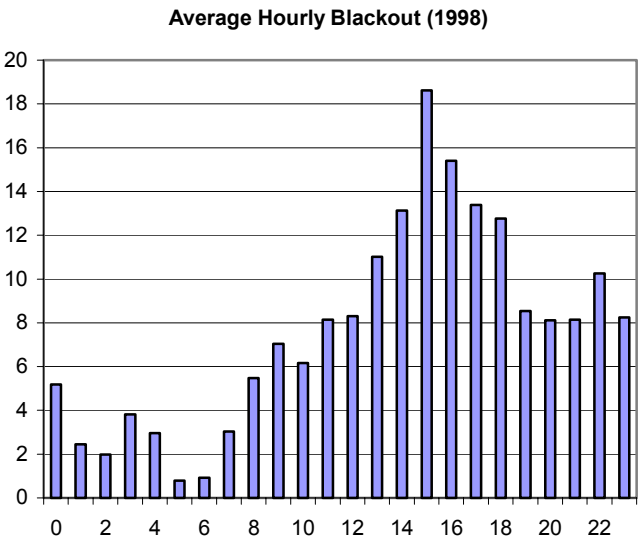
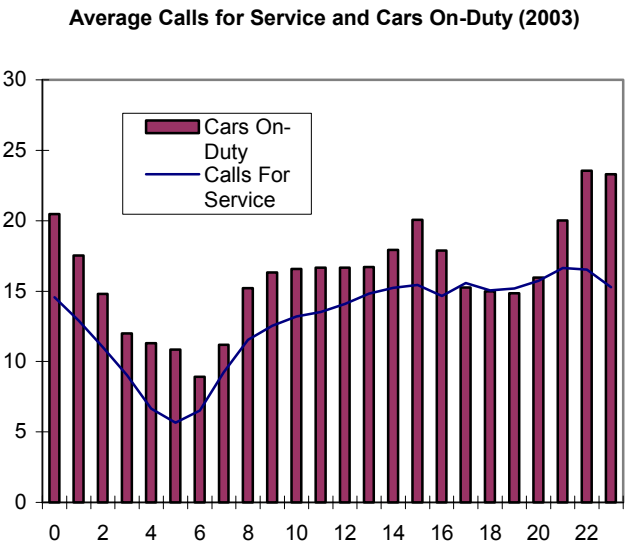
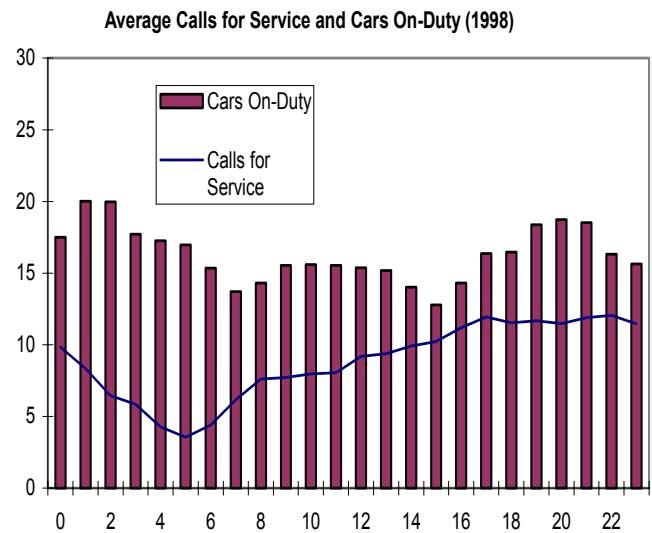


Exhibit 10. Metro Patrol Division: Calls, Cars On-Duty, and Blackout By Hour of Day

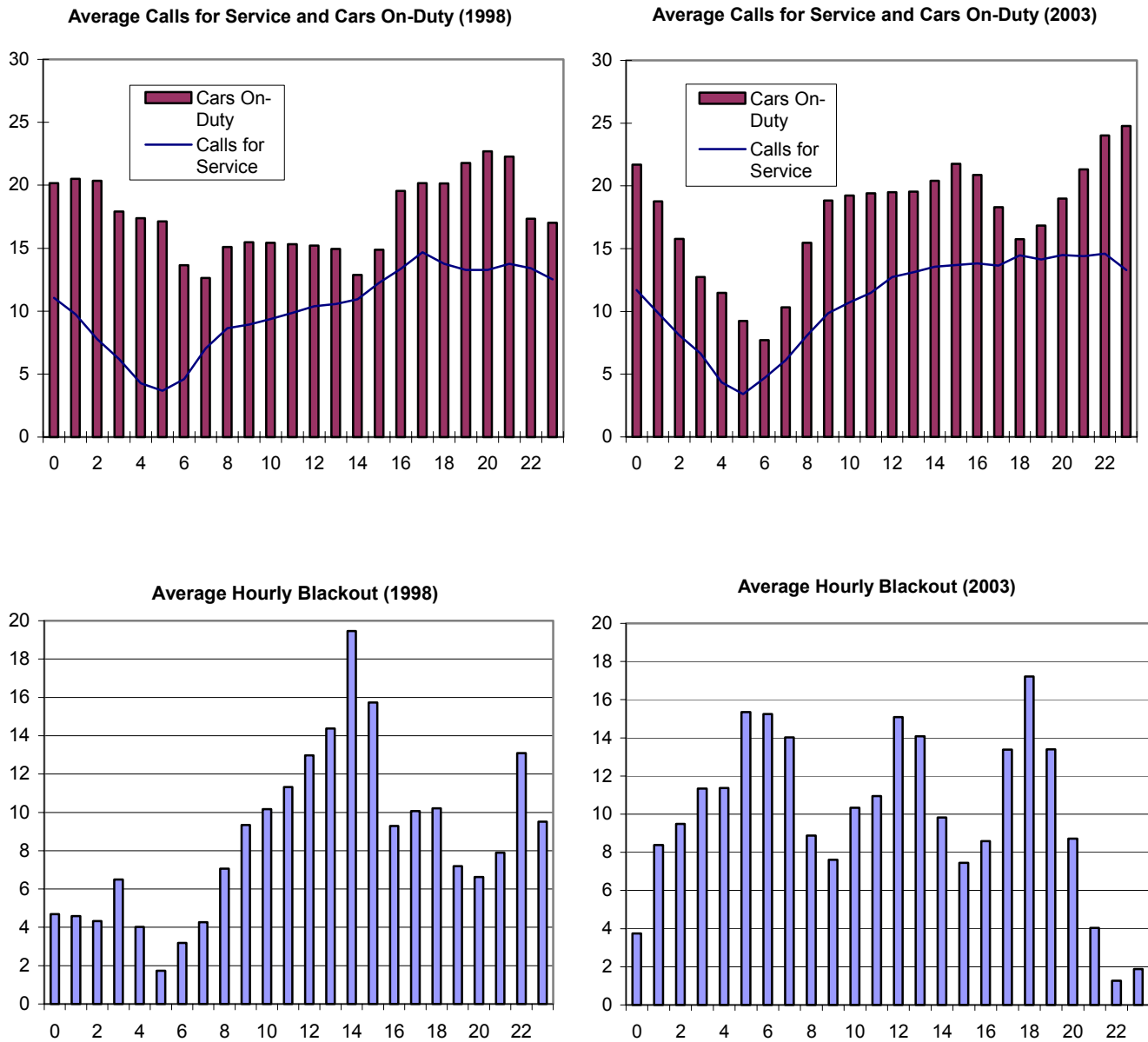


Exhibit 11. East Patrol Division: Calls, Cars On-Duty, and Blackout By Hour of Day

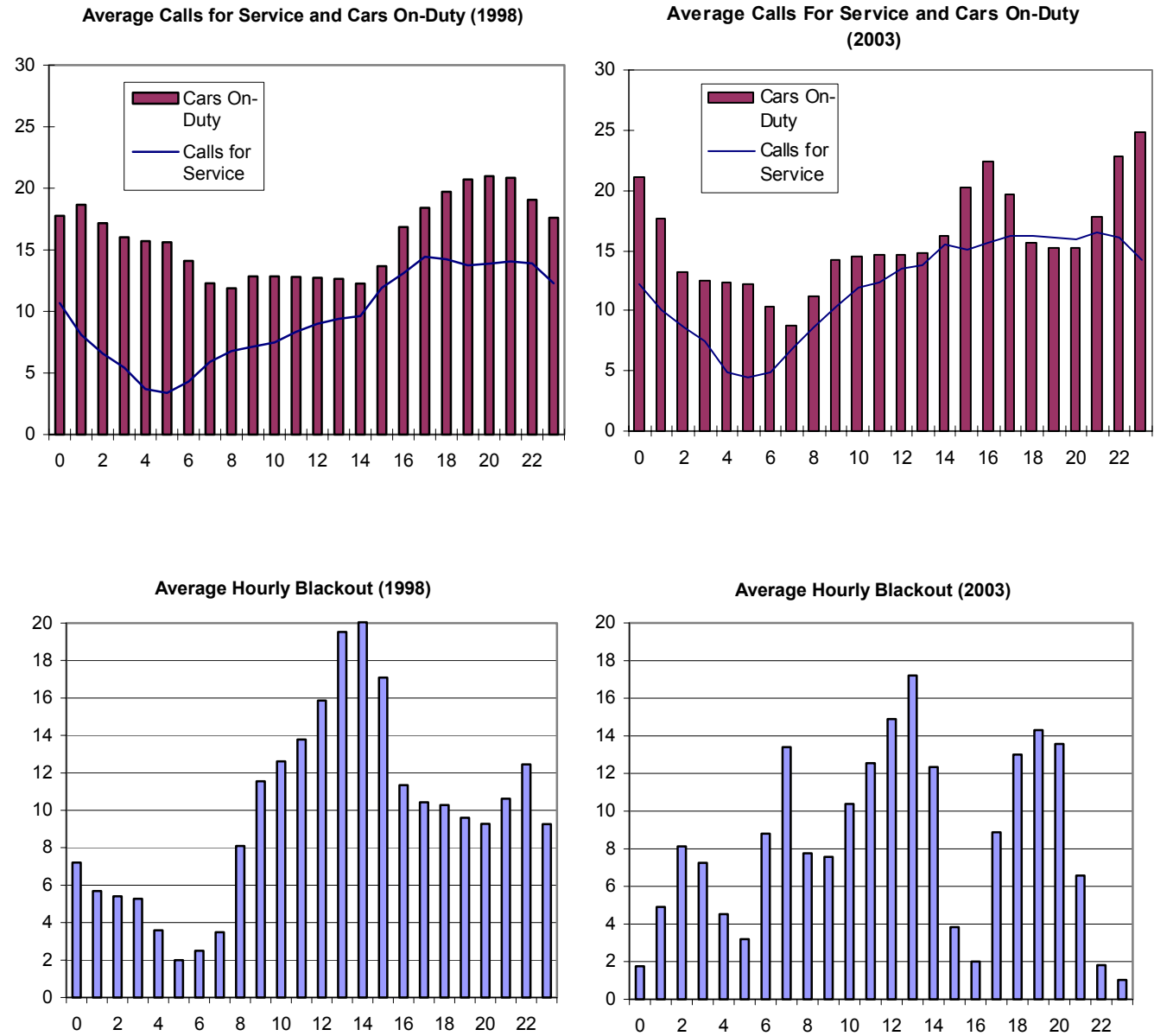
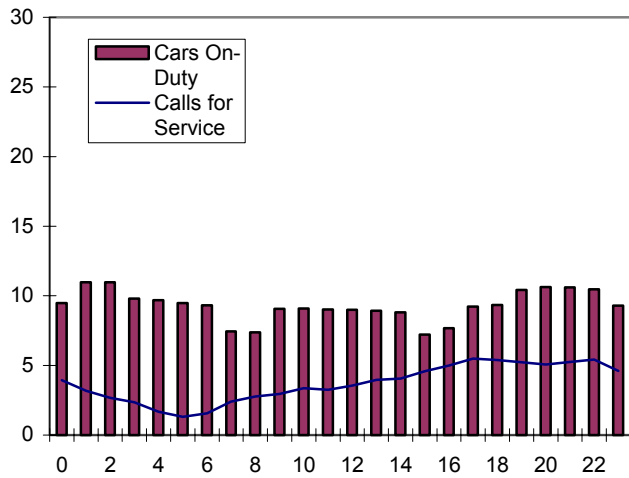
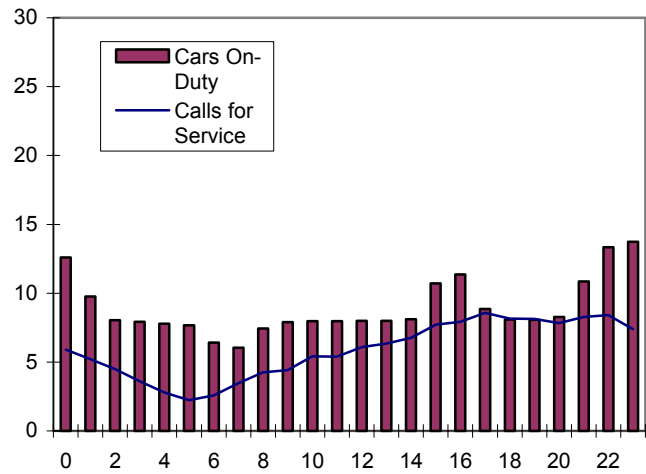


Exhibit 12. North Patrol Division: Calls, Cars On-Duty, and Blackout By Hour of Day

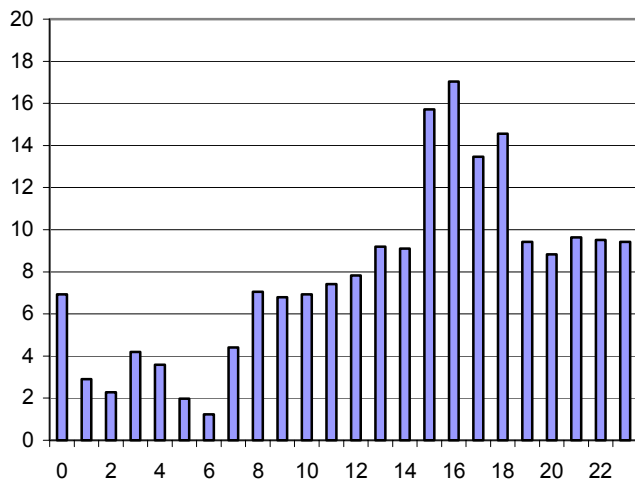
Average Calls for Service and Cars On-Duty (1998)



Average Calls for Service and Cars On-Duty (2003)



Average Hourly Blackout (1998)



Average Hourly Blackout (2003)

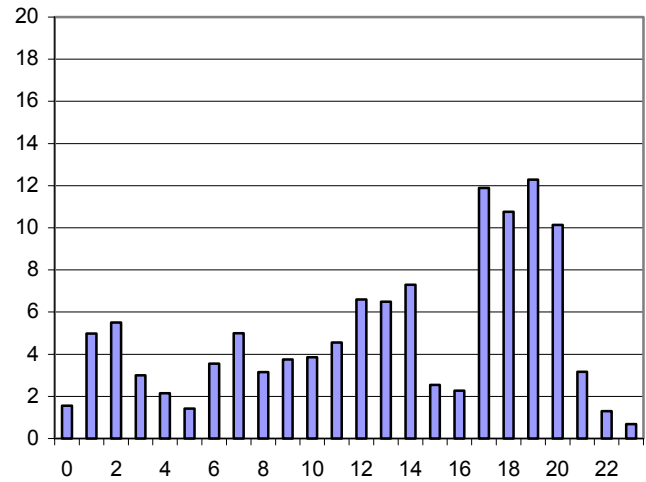
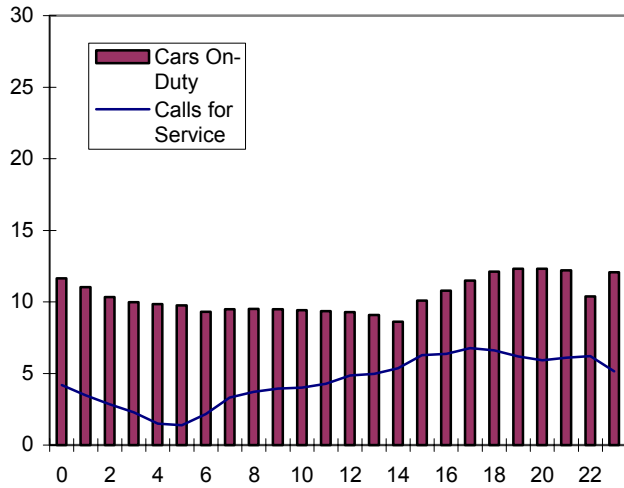
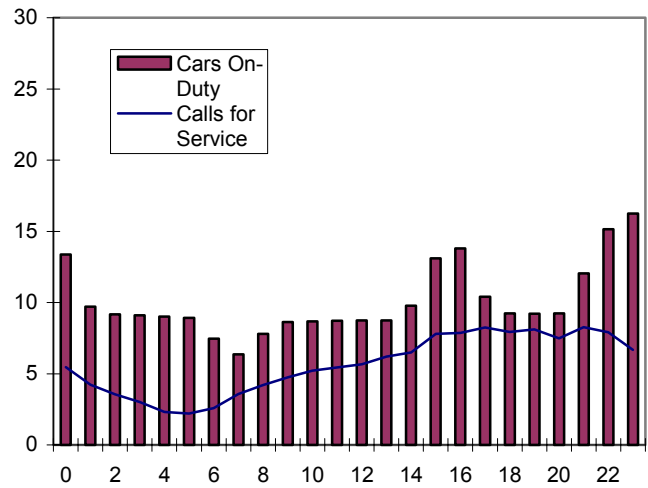


Exhibit 13. South Patrol Division: Calls, Cars On-Duty, and Blackout By Hour of Day

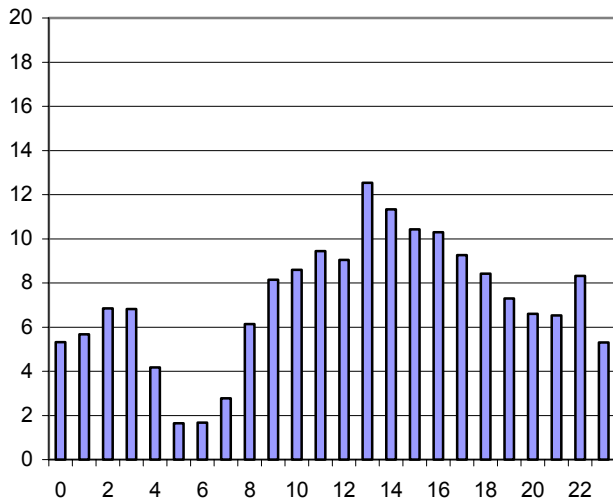
Average Calls for Service and Cars On-Duty (1998)



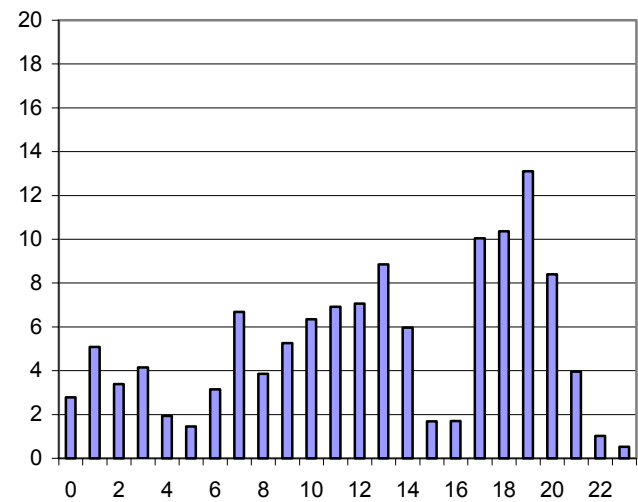
Average Calls for Service and Cars On-Duty (2003)



Average Hourly Blackout (1998)



Average Hourly Blackout (2003)



Response Time and Time Out-of-Service Vary Among Divisions

We measured response time from October 1, 2002, to September 30, 2003, using Police CAD data. Officers are not required to provide arrival time except priority 1 and 2 calls. Only about a quarter of the dispatch records had arrival time recorded. We were unable to measure response time in the original audit because the dispatching system did not record when a police car arrived at the scene.

Response Times Vary Among Divisions

Citywide, the average response time for priority 1 calls was 11 minutes and 6 seconds, with a median response time of 8 minutes and 24 seconds. The average response time for priority 2 calls was 13 minutes and 18 seconds, with a median response time of 10 minutes and 48 seconds. (Priority 1 and 2 calls are required to have arrival time recorded.) On average, the Central division has the fastest response time for priority 1 and priority 2 calls. North had the slowest response time. (See Exhibit 14.)

Exhibit 14. Average Response Time By Division (In Minutes)

Division	Priority 1		Priority 2	
	Average Response Time	Median Response Time	Average Response Time	Median Response Time
Central	9.6	7.2	11.9	9.6
Metro	10.8	7.8	13.0	10.8
East	11.4	9.0	13.6	11.4
North	14.5	11.4	17.2	15.0
South	12.0	9.6	13.9	12.0
Citywide	11.1	8.4	13.3	10.8

Source: Dispatch data, October 1, 2002, through September 30, 2003.

Some high priority calls did not have arrival times. About 39 percent of the priority 1 calls and 44 percent of the priority 2 calls had invalid response times. Although officers are supposed to provide arrival time to the dispatchers for priority 1 and 2 calls, they don't always do so. In these cases, arrival times are recorded as zeros or as the time the call was received. For our analysis, we consider these to be invalid response times. The arrival time is used to determine response time, a performance measure the Police report to the Board. In order to ensure that response time measures are complete and accurate, the Chief of Police should take steps to make sure that officers provide arrival times to the dispatchers for priority 1 and 2 calls.

Types of Calls and Time Out-of-Service Vary Among Divisions

The Central Division responded to the most calls for service over the period we reviewed. Calls for service include mostly citizen initiated calls; department and self-initiated calls are excluded for the calculation of calls for service. There were some differences in types of calls responded to by the different divisions. The Metro and East divisions responded to a higher proportion of disturbances; while the Metro, North and South divisions responded to a higher proportion of intrusion alarms. (See Appendix B for the top ten types of incidents responded to by each division.)

Exhibits 15 and 16 show the average time out-of-service per car responding to a call for service by division, and the average time out-of-service per car responding to a call by type of call for the most common types of calls.⁵ Average time out-of-service was least in the Metro Division and most in the North Division. The pattern may reflect difference in the types of calls, the relative geographic sizes of the divisions, or differences in how calls are handled.

Exhibit 15. Average Time Out-Of-Service on Calls
for Service By Division

Division	Minutes
Central	27.7
Metro	25.9
East	29.3
North	32.1
South	31.5

Source: Dispatch data, October 1, 2002, through September 30, 2003.

Exhibit 16. Average Time Out-Of-Service By Type of Call

Type of Call	Minutes	% of Total Responses
Disturbance	31.0	17.4%
Intrusion Alarm	16.2	8.8%
Disturbance Outside	24.3	7.7%
Suspicious Person	25.3	7.4%
911 Hang Up	17.4	5.7%
Non-Injury Accident	44.0	4.8%
Prowlers	30.6	4.3%
Suspicious Car	21.6	4.3%
Traffic Violation	5.8	2.3%
Injury Accident	64.1	2.2%

Source: Dispatch data, October 1, 2002, through September 30, 2003.

⁵ Time out-of-service represents the time between when a car was sent on a call and when it cleared for service following the call.

Police Department Does Not Measure Blackout

The Police Department does not measure blackout. Instead, it measures immediate car unavailability. Blackout is an important indicator of whether adequate resources are allocated to police patrol and how well these resources are distributed.

Police Department Measures Immediate Car Unavailability

The Police Department stopped measuring blackout and began to measure and report Immediate Car Unavailability (ICU) after we released our original audit. ICU is defined as whenever all cars and vans in a zone are out of service and a critical call has been in queue for at least two minutes. An occasion of immediate car unavailability ceases as soon as the critical call is dispatched or cancelled.

Blackout is when all the cars on duty are out of service and no cars are available to answer the incoming calls for service. Blackout is an indicator of resource allocation to the patrol function and the deployment of those resources. Blackout does not necessarily mean that police cannot respond to emergencies, but it delays dispatches and increases response times and thus can affect citizen perceptions of service levels and police protection. (See Appendix C for graphs showing the relationship between response times and blackout.) Extensive blackout may also indicate that too much of patrol officers' time is committed to answering 911 calls, administrative matters and other activities, leaving them too little time to address neighborhood problems and pursue community policing.

Blackout and ICU measure different things. ICU is a type of blackout that occurs much less frequently and for shorter periods of time. (See Exhibit 17.)

Exhibit 17. Comparing Blackout and ICU

	Blackout	ICU
What it measures	Time when all officers assigned to respond to calls for service are busy.	Blackout periods when a priority one call has been in queue for at least two minutes.
When it begins	As soon as all officers assigned to respond to calls for service are busy.	After a blackout period has begun <i>and</i> a priority one call has been waiting for two minutes.
When it ends	As soon as an officer assigned to respond to calls for service is available.	As soon as a car has been dispatched to the priority one call or the call is cancelled.

Blackout is a better measure of patrol deployment than ICU because blackout measures any time a car is not available to respond to a call. The Chief of Police should measure and report blackout instead of ICU. In addition, the Chief should determine an acceptable level of blackout for the department.

Recommendations

1. The Chief of Police should measure and report blackout and determine an acceptable level of blackout.
2. The Chief of Police should take steps to ensure that officers provide valid arrival times to the dispatchers for priority 1 and 2 calls.

Appendix A

Prior Audit Recommendations

Prior Audit Recommendations

1. The chief of police should prepare goals for board consideration and approval regarding the maximum level of blackout and the maximum percent of patrol officers' time committed to calls for service in each divisions.
2. Based on the options presented in the report and additional use of the simulation model as needed, the chief of police should adopt a deployment plan designed to achieve the board's goals for reducing blackout and time committed to calls for service. The deployment plan should carefully reconsider the use of sworn officers in administrative posts, guided by the recommendations in our forthcoming report on civilianization. Civilians should fill administrative and support positions and sworn officers should be redeployed to patrol duties to the greatest degree possible. The plan should also incorporate the police officer positions currently funded by federal grants that will expire over the next few years.
3. The chief of police should study the effectiveness of two-officer patrol cars to determine how often tow officers are dispatched to calls requiring only one officer. If two-officer cars appear to reduce flexibility in patrol responses, the chief should determine the number of cars needed for patrol and determine whether additional cars should be purchased or whether cars can be reallocated from other functions. Deployment changes based on constraints on patrol car availability, such as the current experiment in the East Patrol Division, should be reevaluated in light of the chief's findings.
4. The patrol bureau commander should regularly report statistics to the Board of Police Commissioners on blackout and the percent of patrol officers' time committed to calls for service.
5. The patrol bureau commander should monitor on-duty staffing in the patrol divisions compared to the determined need and periodically report average on-duty staffing to the Board of Police Commissioners.
6. The chief of police should ensure that the planning and research and computer services units work together to correct the blackout program so it accurately measures periods when patrol officers are not available to respond to an additional call for service.
7. The chief of police should propose for board consideration and approval changes in dispatch protocol that would direct certain classes of calls to alternative handling. Traffic officers, when available, should be dispatched to non-injury accidents not meeting the criteria for walk-in reports.

8. The chief of police should ensure that the alarm ordinance is enforced and monitor reductions in false intrusion alarms, periodically reporting progress to the Board of Police Commissioners.
9. The chief of police should study and report to the board whether it is a better use of resources to pay patrol officers for overtime work or grant them compensatory time, whether the maximum number of compensatory hours accrued should be reduced, and whether accrued compensatory hours should be carried over a fiscal year.
10. The patrol bureau commander should develop criteria to guide division commanders and sergeants in allowing use of partial shift leave.

Appendix B

Most Frequent Types of Incidents Responded To By Patrol Division

Top Ten Types of Calls for Service Responded to: Central Division

Type of Incident	Responses	Percent of Total Responses
Disturbance	21,002	16.8%
Suspicious Person	13,682	10.9%
Disturbance Outside	10,612	8.5%
Intrusion Alarm	9,516	7.6%
911 Hang Up	6,311	5.0%
Non-Injury Accident	5,652	4.5%
Prowlers	4,826	3.9%
Warrant/Subpoena Check	4,085	3.3%
Suspicious Car	4,073	3.3%
Suspicious Party/Drugs	3,431	2.7%

Source: Dispatch data, October 1, 2002 through September 30, 2003.

Top Ten Types of Calls for Service Responded to: Metro Division

Type of Incident	Responses	Percent of Total Responses
Disturbance	20,537	19.3%
Intrusion Alarm	12,627	11.9%
Disturbance Outside	8,521	8.0%
911 Hang Up	7,172	6.7%
Suspicious Person	6,464	6.1%
Prowlers	5,435	5.1%
Non-Injury Accident	4,623	4.3%
Suspicious Car	4,272	4.0%
Injury Accident	2,265	2.1%
Ambulance Enroute	2,176	2.0%

Source: Dispatch data, October 1, 2002 through September 30, 2003.

Top Ten Types of Calls for Service Responded to: East Division

Type of Incident	Responses	Percent of Total Responses
Disturbance	24,711	20.8%
Disturbance Outside	10,569	8.9%
Intrusion Alarm	8,146	6.9%
Suspicious Person	7,737	6.5%
911 Hang Up	6,686	5.6%
Prowlers	5,259	4.4%
Suspicious Car	5,157	4.3%
Non-Injury Accident	4,955	4.2%
Suspicious Party/Drugs	2,940	2.5%
Ambulance Enroute	2,818	2.4%

Source: Dispatch data, October 1, 2002 through September 30, 2003.

Top Ten Types of Calls for Service Responded to: North Division

Type of Incident	Responses	Percent of Total Responses
Disturbance	8,842	14.9%
Intrusion Alarm	6,047	10.2%
Suspicious Person	4,147	7.0%
Suspicious Car	4,039	6.8%
Disturbance Outside	3,476	5.8%
Non-Injury Accident	3,355	5.6%
911 Hang Up	3,302	5.5%
Traffic Violation	2,256	3.8%
Prowlers	2,116	3.6%
Prisoner Transfer	1,479	2.5%

Source: Dispatch data, October 1, 2002 through September 30, 2003.

Top Ten Types of Calls for Service Responded to: South Division

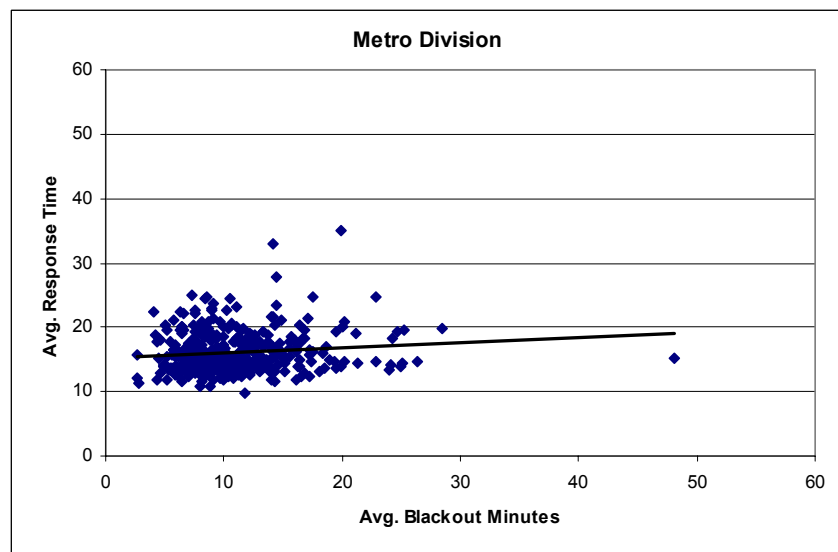
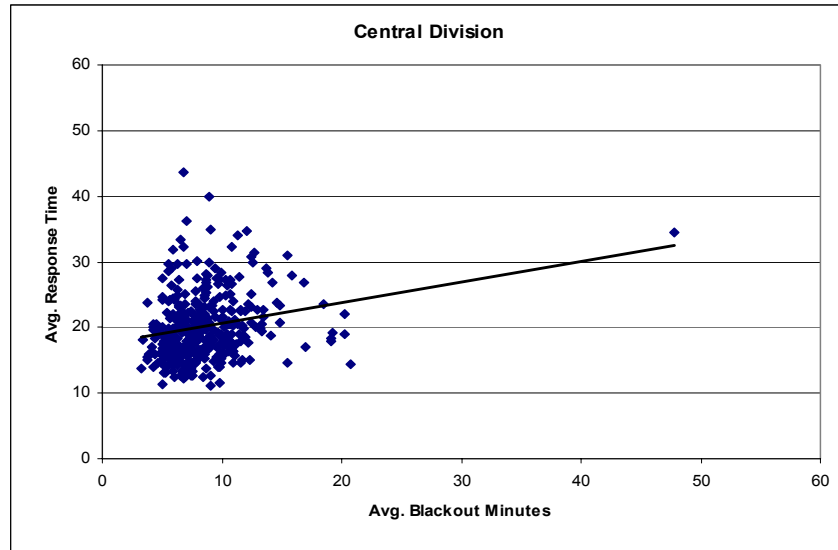
Type of Incident	Responses	Percent of Total Responses
Disturbance	8,727	15.7%
Intrusion Alarm	6,103	11.0%
911 Hang Up	3,958	7.1%
Disturbance Outside	3,580	6.4%
Suspicious Person	3,346	6.0%
Non-Injury Accident	3,203	5.7%
Suspicious Car	2,966	5.3%
Prowlers	2,798	5.0%
Traffic Violation	2,080	3.7%
Stranded Motorist	1,451	2.6%

Source: Dispatch data, October 1, 2002 through September 30, 2003.

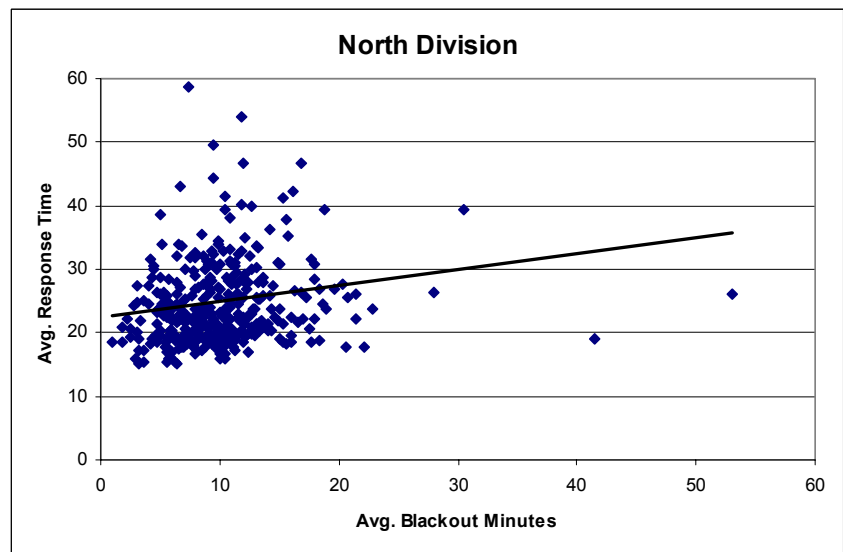
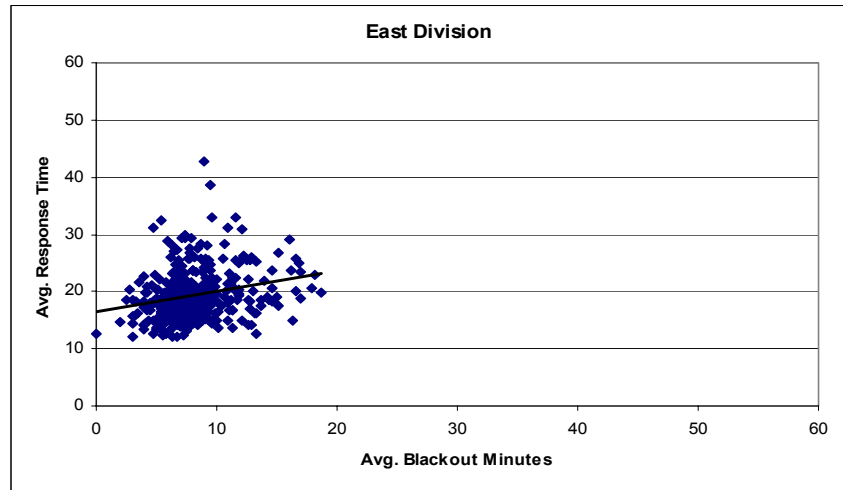
Appendix C

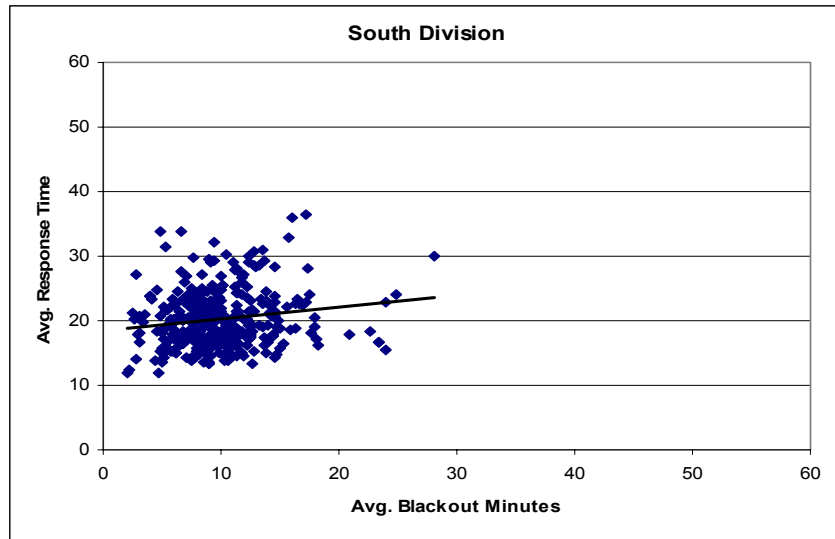
Response Time Increases When Blackout Period Is Longer

We used the result of blackout and response time analysis to plot the following graphs. Each dot on the graph represents the average length of blackout periods and average response time for one particular day. The line in the graph is a trend line plot by the Excel spreadsheet based on the dots. A line goes up means a positive relationship. There is a positive relationship between the average minutes of blackout periods and average response time in all of the five patrol divisions.



Patrol Deployment: Blackout Analysis





Appendix D

Chief of Police's Response

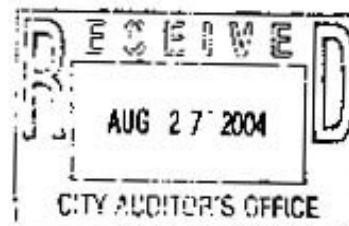
Police

KC/MO

Richard D. Easley
Chief of Police

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August 26, 2004



Dr. Mark Funkhouser
Office of the City Auditor
21st Floor, City Hall
414 E. 12th Street
Kansas City, MO 64106

Dear Dr. Funkhouser,

On behalf of the Board of Police Commissioners and myself, I would like to take this opportunity to express our appreciation for the follow-up audit report on Patrol Deployment: Blackout Analysis (which is a first draft).

Our initial response to the two recommendations you make on page 21 is as follows.

Recommendation #1

The Chief of Police should measure and report blackout and determine an acceptable level of blackout.

Response to Recommendation #1

Your office maintains that blackout time should be used to measure the department's performance because it includes all of the calls for service (emergency and non-emergency) and all of the cars available on the street that are available to respond to those calls for service. The police department has maintained (since 1998) that ICU (Immediate Car Unavailability) is a better tool to examine performance, as ICU is focused on only those calls for service where someone's life or property may be under threat of injury or damage. It is still the position of the police department that ICU is the more accurate tool to use when examining the department's performance. It is also the department's position that by measuring ICU, we are truly tracking information that helps us in the deployment and management of our officers.

Recommendation #2


The Chief of Police should take steps to ensure that officers provide valid arrival times to the dispatchers for priority 1 and 2 calls.

Response to Recommendation #2

The department strongly agrees with this recommendation, especially since this has already been department policy, and I will ensure the affected bureaus (Patrol and Administration) make that issue a priority.

I would again like to express my appreciation for your efforts in this matter and I look forward to the exit conference to further discuss this report. Please do not hesitate to contact me with any questions you have.

Sincerely,


Richard D. Easley
Chief of Police

cc: Board of Police Commissioners